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LEARNING THEORY AS APPLIED TO

THE COUNSELING PROCESS

by

Melvin H. Larsen

A seminar report submitted in partial fulfillment
of the requirements for the degree

of

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in

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INTRODUCTION

The literature contains much about learning. But, what do we mean by learning?

Learning is the process by which an activity originates or is changed through reacting to an encountered situation, provided that the characteristics of the change in activity cannot be explained on the basis of native response tendencies, maturation, or temporary states of the organism (e.g., fatigue, drugs, etc.). (Hilgard, 1966, p. 2)

Effective counseling requires that the client learn. Even though client learning is essential to effective counseling, relatively little has been done to relate learning theory to the counseling process. Significant work in this direction has been done by Shoben (1949), Dollard and Miller (1950), Pepinsky and Pepinsky (1954), and Krumboltz (1966). The work of Krumboltz (1966) is the most revolutionary because it suggests new approaches to counseling based on learning theory and research, while the others mentioned are largely explanations of existing techniques in terms of learning theory.

It is recognized that the lack of clear specified counseling techniques is due to a lack of application of learning theory to counseling (Ford and Urban, 1963). The need for this work to be done is urgent.

Most of the counseling and psychotherapeutic procedures currently in use have virtually no research base for their existence. The research that does exist generally shows the techniques to have no measurable effect. The few effects that are shown are usually trivial. Of course there are many difficulties with performing adequate experimental studies with complex human behavior, but it is quite clear that we do not already know the most effective ways of helping people.

For example, Gonyea's study (1964), which won a research award from the American Personnel and Guidance Association in 1965, showed that there was a negative relationship between the extent to which counselors developed the "ideal therapeutic relationship" and the degree to which their clients reported themselves to be improved. The correlation was a $-.14$, not significantly different from zero, but in the direction that those counselors who were most "ideal" produced the least improvement in clients. Certainly evidence such as this should cause us to hesitate before preaching that we already know what the ideal therapeutic relationship is. (Krumboltz, 1966, pp. 20-21).

Objectives

The purpose of this paper is to provide a means for increasing the effectiveness of counseling. This will be done by providing a model for the counseling process that is based on learning theory concepts and principles. This objective will be accomplished in the following manner: (1) Relevant concepts and principles in some basic learning theories will be briefly reviewed; (2) A counseling procedure based on learning theory will be presented, including a discussion of techniques; (3) A method for evaluating counseling techniques will be suggested.

BASIC LEARNING THEORY REVIEWED

Thorndike's Connectionism

The learning theory of Edward L. Thorndike (1913 , 1928, 1932 , 1935, 1949) revolves around situation-response connections. Thorndike believed that human behavior involved millions of these situation-response connections (Thorndike, 1913). These human modifiable tendencies are controlled by the three laws of Readiness, Exercise, and Effect, which make it possible to modify what is learned.

The Law of Readiness is: When any conduction unit is in readiness to conduct, for it to do so is satisfying. When any conduction unit is not in readiness to conduct, for it to conduct is annoying. When any conduction unit is in readiness to conduct, for it not to do so is annoying

The Law of Exercise comprises the laws of Use and Disuse.

The Law of Use is: When a modifiable connection is made between a situation and a response, that connection's strength is, other things being equal, increased. By the strength of a connection is meant roughly the probability that the connection will be made when the situation recurs

The Law of Disuse is: When a modifiable connection is not made between a situation and a response during a length of time, that connection's strength is decreased. The explanations and qualifications stated in connection with the Law of Use apply here also.

The Law of Effect is: When a modifiable connection between a situation and a response is made and is accompanied or followed by a satisfying state of affairs, that connection's strength is increased. When made and accompanied or followed by an annoying state of affairs, its strength is decreased. The strengthening effect of satisfyingness (or the weakening effect of annoyingness) upon a bond varies with the

closeness of the connection between it and the bond. This closeness or intimacy of association of the satisfying (or annoying) state of affairs with the bond in question may be the result of nearness in time or of attentiveness to the situation, response and satisfying event in question. (Thorndike, 1913 , pp. 1-4)

Thorndike later altered these laws (Thorndike, 1932 , 1935) to show that the Law of Use operated only when reward followed the connections, and that the Law of Effect operated to strengthen rewarded connections but did not operate to correspondingly weaken punished connections as was predicted. The result of these revisions was that the concept of reward emerged as the most important principle in Thorndike's theory, even though he did not renounce the principles of exercise and punishment entirely.

Other important principles in Thorndike's theory include "identical elements," "belongingness," and "spread of effect."

The principle of identical elements is that learning is enhanced by past experience when elements in a present situation are identical to those learned in a previous situation (Thorndike, 1913).

The principle of belongingness is that a connection is learned easier if the response belongs to the situation, and an aftereffect is more effective if it is relevant or belongs to the connection that it strengthens or weakens (Thorndike, 1935).

Thorndike's spread of effect experiments (1933 , 1933) showed that reward acts not only on the connection to which it belongs, but also on adjacent connections, both before and after the rewarded connection. The effect acts to strengthen even punished connections in the neighborhood of the rewarded one.

Thorndike believed that learning occurs as the result of trial and error. The learner tries different responses to a situation or problem until he makes one that is rewarded or successful, and thus may be learned. What is successful or rewarding is partially determined by the total attitude or "set" of the organism. Set, refers to adjustments that are characteristic of individuals raised in a given culture.

An important aspect of Thorndike's theory is that he believed that humans (unlike lower animals) are capable of selecting and responding to only those elements of a problem that are essential to its solution. He believed that all human behavior can be explained in terms of previously learned connections, and that there is nothing mysterious about responses to new situations.

The principle of "associative shifting" suggests that a response can become connected to a stimulating situation that is different from the one to which it was originally connected.

Thorndike's theory is of special significance because it has given rise to a great amount of research and theory in the field of learning. It also provided many basic principles that have since been developed by other theorists.

Pavlov's Classical Conditioning

Ivan P. Pavlov's theory of learning (Pavlov, 1927, 1928, 1941, 1955) provides a physiological explanation of behavior, with the cerebral cortex being of central importance. His discovery of the "conditioned reflex" and related phenomena has important implications for counseling (Wolpe, 1958; Lazarus, 1961).

The simple "conditioned reflex" is formed when a previously neutral stimulus (such as a bell) is repeatedly reinforced by an unconditioned stimulus (such as food) followed by an unconditioned response (such as salivation), until the conditioned stimulus (bell) acquires the power to elicit the conditioned response (salivation) in the absence of the unconditioned stimulus (food) (Pavlov, 1927).

In Pavlov's conditioning, reinforcement was associated with the stimulus. He found that when the conditioned stimulus was repeatedly presented without reinforcement, the conditioned response gradually diminishes and disappears, in a process that is called "experimental extinction." However, after a lapse of time the conditioned response returns; this is called "spontaneous recovery."

It was also discovered that a "conditioned reflex" that is conditioned to one stimulus can also be elicited by other stimuli that are not necessarily very similar to the first. This is explained by "irradiation" of excitation to other cells in the cerebral cortex. This "irradiation" is normally corrected by "concentration" of excitation back to the original cells, which follows irradiation. Concentration permits "differentiation," which in turn allows the organism to adapt to its environment.

Another important factor in this learning process is the principle of "inhibition." The negative stimulus is inhibited, reducing the irradiation of excitation from the positive stimulus, and concentrating it where it belongs. Inhibition also irradiates and must be concentrated.

"Irradiation" depends on the strength of excitation or inhibition. "Thus weak excitation (or inhibition) irradiates; medium strengths concentrate; strong excitation (or inhibition) again irradiate"

(Hilgard, 1966, p. 57).

These principles contained in Pavlov's theory are important for our consideration and study. Wolpe (1958), and Lazarus (1961), have successfully used some of these principles to help clients overcome emotional problems.

Guthrie's Contiguous Conditioning

The theory of contiguous conditioning proposed by Edwin R. Guthrie (1935, 1938, 1952) offers important considerations for counseling. It proposes that learning occurs without reinforcement, and suggests methods for breaking bad habits.

The essential condition for learning in Guthrie's system is that the stimulus and the response occur together. "A combination of stimuli which has accompanied a movement will on its recurrence tend to be followed by that movement" (Guthrie, 1935, p. 26).

He proposed that learning takes place in an all-or-none fashion. "A stimulus pattern gains its full associative strength on the occasion of its first pairing with a response" (Guthrie, 1942, p. 30). Furthermore, the response that is learned is the one that occurs last in the stimulus situation. It should also be noted here that Guthrie's all-or-none principle of learning applies to specific small muscle movements. Behavioral acts are composed of many of these movements. Once learned, an act behaves like a single movement. In the final analysis, it is the stimulus-response connection that is learned in an all-or-none manner, and not complex behavioral acts, or skills. Accordingly, practice brings improvement because new stimulus-response connections are learned which improve performance of a skill.

Extinction occurs because a new response is learned which is incompatible with, and replaces the original response. The interference of incompatible responses also explains forgetting.

Punishment is effective only if the last response to the punished situation is incompatible with the punished response, and occurs in the presence of the cues for the punished response. What the punishment makes the person do to escape, is the most important consideration because that is what will be learned.

Three methods for breaking habits are proposed (Guthrie, 1935). These methods are best represented by the words: threshold; fatigue; and incompatible stimuli.

The threshold method is to present the stimulus at an intensity below that required to elicit the response, and increase its intensity so gradually that the response never occurs. This technique has since been used by Lazarus (1961) to reduce anxiety in clients who have emotional problems.

The fatigue method is to make the individual perform the response again and again until he stops responding and makes an incompatible response. This response will then be made when the stimulus situation occurs again.

The method involving incompatible stimuli is carried out by pairing the incompatible stimulus with the stimulus for the undesired response. The incompatible stimulus then elicits an incompatible response which replaces the undesired response.

Guthrie's theory is unique in that it explains both learning and forgetting in the same terms, and contends that reinforcement is not necessary for learning. The man himself is not as dogmatic as his

theory suggests, because he admits that much of the phenomena and descriptions found in opposing points of view are correct and useful for certain purposes (Guthrie, 1952).

Hull's Reinforcement Theory

The reinforcement theory of Clark L. Hull (1943, 1951, 1952) is a formal, detailed, and mechanistic representation of the learning process. It explains learning in terms of input, intervening variables, and output. Reference to consciousness is avoided, but the theory contains concepts that are potentially useful in counseling situations.

The principle of reinforcement is a central part of the learning process in Hull's system. It serves to strengthen a stimulus-response connection by reducing the strength of a drive-stimulus.

The basic unit of behavior is the habit. It is a learned connection between a cue (or cues) and a response, built through reinforced practice. The strength of a habit is measured in terms of the number of reinforced trials.

Hull's principle of "habit-family-heirarchy" refers to a set of alternative need satisfying habits, integrated by a common goal-stimulus, and arranged in preferential order. If one member of a "habit-family-heirarchy" is reinforced in a new situation, all other members of the family share at once in the tendency to be evoked as reactions in that situation (Hull, 1937). The "habit-family-heirarchy is important because it permits maximum utilization of past experience in solving present problems.

The "goal-gradient" principle implies that the nearer the learner is to a goal, the stronger will be the response-evoking power of the goal.

This principle also applies to perceived incentives which are of two kinds: those which cause approach; and those which cause avoidance. When these two incentives are both attached to the same goal object, an approach-avoidance conflict may develop. The studies of approach-avoidance conflict (Brown, 1948; Miller, 1944) indicate that the gradient of avoidance is steeper than the gradient of approach. Hull (1952) explained it in terms of reaction potential, indicating that the avoidance reaction potential becomes greater than the approach reaction potential when the learner approaches the goal beyond the point where the two are equal. Thus, the conflict persists because the goal is never reached. Dollard and Miller (1950) indicated that approach-avoidance conflict was the primary cause of neurosis in humans. Their theory of psychotherapy was geared to deal primarily with this kind of conflict.

Drive is essential to Hull's system, because: it provides the basis for primary and secondary reinforcement; it activates habit-strength into reaction potential; and it provides differential internal stimuli that guide behavior, consisting of approach to positive incentives, and withdrawal from negative incentives.

The reaction threshold is the minimum value of reaction potential that will allow the response to occur. This depends on the amount of inhibition that is present for a given response. If the inhibition connected with the response is increased, more reaction potential will be required to cause the response to occur.

Hull's theory has done much to help us understand goal directed behavior. It also has provided us with important clues for the solution of learning problems that arise during the counseling process.

Skinner's Operant Conditioning

The theory of B. F. Skinner (1938, 1953 , 1957) is largely a development of Thorndike's law of effect principle of selecting and connecting. Many of his formulations have found application in education, and are also applicable to problems that arise in counseling.

Skinner distinguishes between two kinds of learning: one is based on "respondents" (responses elicited by known stimuli); the other depends on "operants" (responses emitted by the organism). He also differentiates between two types of conditioning: respondent conditioning (reinforcement is associated with the stimulus); and operant conditioning (reinforcement is associated with and made contingent upon response).

Skinner's primary work has been with operant conditioning in animals. He has since applied his operant conditioning theory and research to humans in the form of programmed learning materials (Holland and Skinner, 1961).

Reinforcement is essential for learning in Skinner's system. It is made contingent upon a desired response, and it acts to increase the probability of responses containing similar elements.

Reinforcers are of two kinds, positive and negative (Skinner, 1953a). A positive reinforcer is a stimulus which strengthens the probability of an operant response. Food, water, and sex are examples. A negative reinforcer is a stimulus which when removed, strengthens the probability of an operant. Loud noise, extreme temperatures, and electrical shock are examples of negative reinforcers.

Punishment is uniquely related to reinforcers. It involves the presentation of a negative reinforcer, or the removal of a positive

reinforcer. The use of punishment was not found to be effective, because although it temporarily reduces response rate, it does not reduce the total number of responses to extinction (Skinner, 1938). In other words, the strength of the operant (measured by response rate and the total number of responses made during extinction) is only temporarily decreased. Skinner believed that punishment is a major cause of emotional and behavioral problems in humans (Skinner, 1953).

Schedules of reinforcement were devised by Skinner for use in experimental studies. Continuous reinforcement (reinforcement of every response) is best suited for initial conditioning of a response. However, the response is made more resistant to extinction by using a variable interval reinforcement schedule (reinforcement at varied time intervals). If a rapid response rate is desired, a variable ratio schedule (reinforcement after varied numbers of responses) is most effective.

Reinforcement may be accomplished by the use of secondary reinforcers (previously neutral stimuli that have acquired the power to reinforce through repeated association with stimuli that are reinforcing). An important class of secondary reinforcers are those called generalized reinforcers (Skinner, 1953). They provide access to a variety of primary reinforcers. Money is a good example of a generalized reinforcer, because it provides access to a number of primary reinforcers such as food, shelter, and entertainment (Hilgard, 1966). Generalized reinforcers eventually become effective in the absence of the primary reinforcers upon which they are based (Skinner, 1953).

In the process of conditioning, the reinforcement can be made contingent upon stimulus properties (discrimination), or upon response

properties (differentiation). In either case, the response must still occur before it can be reinforced.

In a significant extension of Skinner's work with reinforcers, Premack (1959), in a series of experiments on monkeys and children, found that any response A will reinforce any response B, if the independent rate of A is greater than that of B. This important discovery by Premack opened the door to behavioral modification by making a high probability response contingent upon the completion of a low probability response. Thus, the high probability response is used to reinforce a response of a lower probability.

New behavior can be "shaped" by reinforcing responses, which successively approximate the desired response, until the desired response is achieved. This technique, along with other operant conditioning principles, applies to language just as well as it does to nonverbal behavior (Skinner, 1957). In other words, verbal behavior is "shaped" by the verbal reinforcement of others in one's environment.

During the course of his experiments, Skinner discovered that some inappropriate behavior was learned accidentally. He called this "superstitious" behavior, and believed that it occurred because of the accidental association of a response and a reinforcement. This could explain various kinds of inappropriate behavior in humans.

It is evident that the operant conditioning theory of B. F. Skinner has contributed much to our understanding of the learning process. It also has provided us with methods for altering behavior by reinforcement of appropriate responses.

Tolman's Sign Learning

The sign learning theory of Edward C. Tolman (1932 , 1951) provides important alternatives to the stimulus-response explanations of learning. It also provides additional principles that can be used to guide learning in the counseling process. It is a cognitive theory which stresses the learning of meanings instead of movements. The organism learns to follow signs to a goal. These signs are in the form of meanings, significant relationships, and behavioral routes or maps.

Behavior is viewed as being molar rather than molecular. The behavioral act has distinctive properties irrespective of underlying processes. It is goal directed but not teleological. Description of behavior deals with the organism's activities and purposes as it uses environmental supports as means for obtaining a goal. The way the organism uses environmental objects to achieve goals characterizes molar behavior as cognitive and purposive. There is a selective preference for short or easy means-activities as opposed to long ones. This is called the principle of least effort. Finally, molar behavior is teachable, and as such can be changed by manipulation of environmental objects. Tolman (1938) recognized the importance of environmental variables, and individual differences in organisms. These variables are divided into independent variables (stimuli, etc.), intervening variables (inferred processes), and dependent variables (responses, etc.), in the learning relationship.

Evidence for the kind of molar behavior and sign learning that Tolman proposed is provided by experiments that indicate the existence of reward expectancy, place learning, and latent learning.

The existence of reward expectancy is supported by experiments on monkeys (Tinklepaugh, 1928), rats (Elliot, 1928), and chimpanzees (Cowles and Nissen, 1937). These experiments indicate that animals form cognitive expectations of goal objects, and will reject less valued objects when these expectations exist.

The place learning experiments of Lashley and Ball (1929); Macfarlane (1930); Tolman, Ritchie, and Kalish (1946, 1947); Tolman and Honzik (1930); Caldwell and Jones (1954); Deutsch and Clarkson (1959); and Ritchie (1948), are reviewed by Hilgard (1966, pp. 196-199). These experiments show that rats can appropriately adapt their behavior to meet changed conditions while moving from a starting position to a goal. This indicates that they know where the goal is, and don't have to rely on specific stimulus-response connections in order to reach the goal.

Experiments on latent learning (MacCorquodale and Meehl, 1954, pp. 199-213) indicate that some learning takes place without reinforcement, and gives support to the idea that cognitive maps are learned, and used only when the need arises.

Behavior is based on expectancy probabilities which are a function of past experience. Learning is manifest in behavior only when drives are aroused, creating demands for goal objects. The organism brings to the problem situation various hypotheses for obtaining goal objects, as a result of past experience. Goal achievement confirms these hypotheses and increases their probability of being used again in similar situations.

Tolman (1949) proposed six "types of connections or relations" that are learned. Two of these, cathexes and equivalence beliefs, have important implications for counseling.

A cathexis is a learned relationship between a drive and an object. It may be either positive or negative. A positive cathexis causes a person to approach the object, and a negative cathexis causes the individual to avoid the object. Tolman's learned cathexes have essentially the same effect on the organism as do the perceived incentives in Hull's theory.

Equivalence beliefs cause the organism to react to a secondary goal or disturbance in the same way as it would in the presence of the primary goal or disturbance. Faulty equivalence beliefs are an explanation for some types of inappropriate behavior.

Tolman's theory is significant because it fills some of the gaps that were unexplainable in terms of stimulus-response theory. It also represents a kind of connecting link between the stimulus-response theories and the cognitive gestalt explanations of learning. Tolman accepted the principles of reinforcement and contiguity as valid explanations for some kinds of learning, while other kinds required cognitive processes as explanations. This approach opens the door to the possibility that the various explanations are valid for different kinds of learning situations.

Gestalt Theory

Gestalt theory, first proposed in 1912 by Max Wertheimer, emphasizes the organized nature of psychological processes (perception, thinking, etc.) used in learning. The basic elements of the theory are discussed in the works of Wertheimer (1923, 1945, 1959), Koffka (1924, 1935), and Kohler (1925, 1929, 1940, 1947). The theory originally dealt with perceptual organization (Wertheimer, 1923), but Koffka (1935) adapted the gestalt laws of perceptual organization to the learning process,

contending that they were valid for learning. Hilgard (1966) has rearranged the laws of organization discussed by Koffka into a more systematic presentation in which the law of Pragnanz has four laws of organization subordinate to it.

The law of Pragnanz suggests that psychological organization always tends to move toward the "good" gestalt. The organization will be as good as the prevailing conditions will allow, and a "good" gestalt has regularity, simplicity, and equilibrium. This equilibrium is upset by tensions that arise in learning situations. Hence, the law of Pragnanz applies to the learning process.

The law of similarity is that similar items or transitions tend to form groups in perception, and as a result are learned more readily than dissimilar ones. This principle was supported by Kohler (1941) in a series of experiments using nonsense syllables, two place numbers, and two dimensional nonsense figures. Koffka (1935) used the law of similarity to explain the selection of memory traces by similar objects in the environment.

The law of proximity is that perceptual groups are favored according to the nearness of the parts in time and in space. This has important implications for structuring learning situations that will be most conducive to learning.

The law of closure is that closed areas are more stable than unclosed ones. In learning, the direction of behavior is toward an end-situation which brings closure. "In a problematic situation the whole is seen as incomplete and a tension is set up toward completion. This strain to complete is an aid to learning, and to achieve closure is satisfying" (Hilgard, 1966, p. 235).

The law of good continuation is that perceptual organization tends to occur in such a manner that straight lines appear to continue, and part circles appear as circles, etc., leading toward good organization. This is similar to the principle of "belongingness" proposed by Thorndike.

These laws of organization are also important in Koffka's theory of "trace" (1935, pp. 423-528). This theory assumes that traces exist which persist from prior experiences, and which represent the past in the present. Present processes are said to exist which can select, reactivate, or in some manner communicate with the trace. The result is a new process of recall or recognition. The processes and communications of the trace system follow the gestalt laws of organization that have been discussed.

Kohler (1938) and Katona (1940) elaborated on the trace concept. Katona distinguishes between individual traces of specific items and structural traces of whole processes. Structural traces persist longer, are formed faster, and are more flexible than individual traces (Katona, 1940, pp. 194-195).

Individual traces are constantly changing and being replaced through the process of retroactive inhibition. This process of change moves toward the good gestalt, so that the trace system itself becomes increasingly more consolidated. In doing so, it becomes (like a habit) increasingly more available for use. Conditions of practice which make a trace more and more available for mere repetitions of one process, may make it less available for other processes (Koffka, 1935, p. 547). This is one of the dangers of too much drill in school subjects, because drill may have a "blinding" influence (Luchins, 1942).

The principle of "insight" is perhaps the greatest contribution of gestalt learning theory. It was proposed (Kohler, 1925) as an alternative to Thorndike's trial and error concept of learning. Kohler's convincing experiments with apes (Kohler, 1917) provided substantial evidence of the importance of insight learning in problem solving. Insight, better than any other form of learning, exemplifies the gestalt laws of organization. It can be defined as a sudden perception or understanding of means-ends relationships, with a jump in performance and a generalized ability to solve all similar problems. Descriptive characteristics of insight learning have been reviewed (Hilgard, 1966, pp. 240-243), and are here summarized:

1. A more intelligent organism is more likely to achieve insight. Experiments by Kohler (1917) on apes, and Richardson (1932) with children, support this assumption.

2. An experienced organism is more likely to solve problems by insight than a less experienced one (Birch, 1945). Thus previous experience is essential for some kinds of learning that are based on the understanding of certain other concepts. Maier (1930) showed that experience alone is not enough, but that it had to be used appropriately before problems could be solved.

3. "Insight is possible only if the learning situation is so arranged that all necessary aspects are open to observation" (Hilgard, 1966, p. 241). This principle has important implications for the structuring of learning situations in the counseling process.

4. Trial and error behavior is present prior to achieving insightful solution of a problem. However, this trial and error is often the trying of hypotheses which have to be rejected. This is different than

blind, fumbling trial and error because it represents intelligent searching or organized behavior.

A list of some distinctive characteristics of insight learning in humans enhances our understanding of the principle.

(1) Survey, inspection, or persistent examination of problematic situation. (2) Hesitation, pause, attitude of concentrated attention. (3) Trial of more or less adequate mode of response. (4) In case initial mode of response proves inadequate, trial of some other mode of response, the transition from the one method to the other being sharp and often sudden. (5) Persistent or frequently recurrent attention to the objective or goal and motivation thereby. (6) Appearance of critical point at which the organism suddenly, directly, and definitely performs the required adaptive act. (7) Ready repetition of adaptive response after once performed. (8) Notable ability to discover and attend to the essential aspect or relation in the problematic situation and to neglect, relatively, variations in non-essentials (Yerkes, 1927, p. 156).

Understanding is implied in insightful learning, and has important effects on other aspects of the learning process. Katona (1940) reported experiments that compared the effects of rote memorization, and understanding, on retention and transfer. It was concluded that learning with understanding improves retention of that which is learned, and also increases problem solving ability in new related situations. Conversely, rote memorization leads to poor retention, and tends to narrow the range of problem-solving. Melton (1941b) was also in agreement with these findings. The implied advantage of learning with understanding is that meaningful learning transfers to new situations and is more enduring. Thus, understanding involves a knowledge of meaningful relationships which can be used in various situations of a similar nature.

Although gestalt learning is not a highly systematized theory, it is held together by the laws of organization, and it supplies us with

important alternatives to stimulus response theories explanations of various kinds of learning. The concepts of insight, and understanding are valuable for their possible applications to the counseling process, as are various other aspects of the theory that have been considered.

Functionalism

Functionalism is not a systematic theory of learning. It is an eclectic outlook which draws mainly from other theories of learning. It is also critical, in that it prefers relativism over absolutism (Carr, 1933). The major contributions to the theory are found in a few significant books (Cofer, 1961; McGeoch and Irion, 1952; Melton, 1964; Osgood, 1953; Robinson, 1932 ; Underwood, 1966; Woodworth, 1958). Several aspects of the functionalist viewpoint that are relevant to the purpose of this paper will be reviewed.

Angell (1907), in outlining the functionalist viewpoint, emphasized the importance of conscious mental operations that are involved in the adjustment of the learner to his environment. He presented functionalism as a cause-and-effect psychology interested in the organisms adjustments to its environment.

John Dewey, called the founder of functionalism (Heidbreder, 1933, p. 212), proposed the "reflex-arc" concept (Dewey, 1896). Briefly stated, this is the concept that activity is a complete cycle in which the response may seek or constitute the stimulus. This means that the relation of a response to the posterior stimulus may be as important as its relation to the anterior one. Related to this line of reasoning is the theory of behavior-primacy.

What (the theory) predicts is that the interaction of a capacity with the environment will generate a specific interest. It predicts that an individual who engages in a task will, unless distracted, find himself absorbed in that task, interested in it and motivated to bring it to completion. (Woodworth, 1958, p. 133)

Another way of stating this is that a response may act as the stimulus for the next response, leading to a goal. This kind of relationship is found in verbal behavior in which words spoken, act as stimuli for the words that follow them.

Melton (1950) believed that one of the primary tasks in some kinds of learning is initial discovery of the adequate response to a problem situation. This discovery may occur by insight, trial and error, guidance, or imitation. Of these methods, imitation has been found to be significant as a means of learning responses to various situations (Bandura and Walters, 1963). Melton does not attempt to say which of these methods is the best, but is content to leave the decision to future research.

An important law of forgetting that is accepted by McGeoch (1932), and Melton (1950), is the law of proactive and retroactive inhibition, which asserts that retention is the function of learning that occurs prior to and following the learning in question. Proactive inhibition is the case in which previous learning interferes with the retention of subsequently learned material. Retroactive inhibition is operating when subsequent learning interferes with the retention of previously learned material. Both of these types of inhibition are closely related to Guthrie's concept of incompatibility of stimuli or responses.

The functional approach to learning is a step in the right direction, but it will require more systematic attempts to integrate the various

principles of learning into a theory that can be tested more effectively by research.

Cognition and Personality

Although the last three theories here reviewed have accepted cognitive processes as important in learning, none of their proponents (except Angell) will admit that these processes are conscious, or consciously controlled. This unwillingness of these learning theorists to accept the existence of human awareness, and conscious control of cognitive processes, has created an unnecessary gulf between the obviously related areas of learning and personality. Allport (1943) felt that this unwillingness of learning theorists to accept the existence of a conscious self was unrealistic:

. . . the existence of one's own self is the one fact of which every mortal person--every psychologist included--is perfectly convinced. (Allport, 1943, p. 451)

In this same article, Allport provides convincing experimental evidence of the existence of the self (or ego).

Closely related to the concept of self is that of functional autonomy (Allport, 1937).

The principle of functional autonomy is general enough to meet the needs of science, but particularized enough in its operation to account for the uniqueness of personal conduct

It clears the way for a completely dynamic psychology of traits, attitudes, interests, and sentiments, which can now be regarded as the ultimate and true dispositions of the mature personality.

Learning brings new systems of interests into existence just as it does new abilities and skills. At each stage of development these interests are always contemporary; whatever drives, drives now.

It readily admits the validity of all other established principles of growth. Functional autonomy recognizes the products of differentiation, integration, maturation, exercise, imitation, suggestion, conditioning, trauma, and all other processes of development; and allows, as they do not, considered by themselves, for the preservation of these products in significant motivational patterns. (Allport, 1937, p. 155)

This principle is concisely summarized in the following passage:

The principle of functional autonomy holds (1) that . . . motives are contemporary, that whatever drives must drive now; that the "go" of a motive is not bound functionally to its historical origins or to early goals, but to present goals only; (2) that the character of motives alters so radically from infancy to maturity that we may speak of adult motives as supplanting the motives of infancy; (3) that the maturity of personality is measured by the degree of functional autonomy its motives have achieved; even though in every personality there are archaisms (infantilisms, regressions, reflex responses), still the cultivated and socialized individual shows maturity to the extent he has overcome early forms of motivation; (4) that the differentiating course of learning (reflecting ever more diversified environmental influence), acting upon divergent temperaments and abilities, creates individualized motives. The dynamic structure of every personality is unique, although similarities due to species, culture, stages of development, climate, may produce certain resemblances that justify--so long as they are admitted to be approximations--the use of universal dimensions for the purpose of constructing convenient "types" according to the special interests of the investigator. While not denying the possible existence of instincts in infancy--or even the persistence of some instinctive (or reflex) forms of activity throughout life--still the principle of functional autonomy regards the developed personality as essentially a post-instinctive phenomenon. (Allport, 1940, p. 545)

It is evident that Allport accepted basic learning theory principles as valid for learning, but he believed that as the individual grows older and matures, his behavior becomes increasingly autonomous or self directed. This trend is due to the development of individual personality traits. Allport defines the trait as

. . . a generalized and focalized neuropsychic system (peculiar to the individual), with the capacity to render many stimuli functionally equivalent, and to initiate and

guide consistent (equivalent) forms of adaptive and expressive behavior. (Allport, 1937 , p. 295)

In essence, the individual progresses from a kind of simple reflex behavior in infancy, to a functionally autonomous, self directed behavior in maturity. The mature individuals's behavior is then determined by the traits, interests, and attitudes, etc., which make up his dynamically organized individual personality. This implies that the mature individual's behavior has come to be dominated by conscious, cognitive processes which act to determine his behavior.

The importance of the self and conscious cognitive processes is also emphasized by Carl Rogers (1951, 1961). He believes that a basic congruence between the individual's phenomenal field of experience and his conceptual structure of the self, is the end-point of personality development (Rogers, 1951, p. 532). This congruence is made possible only through the operation of conscious cognitive processes of the individual.

The idea that learning evolves from simple conditioning to a complex, conscious cognition, is supported by Gagne (1965). He proposes a hierarchy of eight kinds of learning, in which the lower types are prerequisites for the higher types.

Type 1. Signal learning. The individual learns to make a general diffuse response to a signal. This is the classical conditioned response of Pavlov (1927).

Type 2. Stimulus-response learning. The learner acquires a precise response to a discriminated stimulus. What is learned is a connection (Thorndike, 1898) or a discriminated operant (Skinner, 1938), sometimes called an instrumental response (Kimble, 1961).

Type 3. Chaining. What is acquired is a chain of two or more stimulus-response connections. The conditions for such learning have been described by Skinner (1938) and others, notably by Gilbert (1962).

Type 4. Verbal association. Verbal association is the learning of chains that are verbal. Basically the conditions resemble those for other (motor) chains. However, the presence of language in the human being makes this a special type because internal links may be selected from the individual's previously learned repertoire of language (cf. Underwood, 1964).

Type 5. Multiple discrimination. The individual learns to make different identifying responses to as many different stimuli, which may resemble each other in physical appearance to a greater or lesser degree. Although the learning of each stimulus-response connection is a simple Type 2 occurrence, the connections tend to interfere with each other's retention (cf. Postman, 1961).

Type 6. Concept learning. The learner acquires a capability of making a common response to a class of stimuli that may differ from each other widely in physical appearance. He is able to make a response that identifies an entire class of objects or events (Kendler, 1964).

Type 7. Principle learning. In simplest terms, a principle is a chain of two or more concepts. It functions to control behavior in the manner suggested by a verbalized rule of the form "If A, then B," where A and B are concepts. However, it must be carefully distinguished from the mere verbal sequence "If A then B," which, of course, may be learned as Type 4.

Type 8. Problem solving. Problem solving is a kind of learning that requires the internal events usually called thinking. Two or more previously acquired principles are somehow combined to produce a new capability that can be shown to depend on a "higher-order" principle. (Gagne, 1965, pp. 58-59)

Gagne's learning hierarchy provides a logical sequence of learning which progresses from conditioned learning to learning by conscious, cognitive problem solving, which is based on the previous kinds of learning. This system recognizes the validity of the various kinds of learning, as well as a logical relationship between them. It is significant because it recognizes consciousness in human cognitive processes, and at the same time accepts the validity of conditioning principles.

The acceptance of learning theory principles by Allport, and the acceptance of conscious cognitive processes by Gagne, provides an important link between the fields of learning and personality. Hopefully, this will lead to research that will lead to a more unified science of human behavior, and more effective methods of counseling.

THE COUNSELING PROCESS

Client Problems

The client problems that confront counselors range from simple every-day decisions to the more complex nonorganic problems involved in neurotic conflicts. All of these inorganic problems are similar in that they are all problems that involve or result from learning. Pepinsky (1948) proposed eight tentative categories for the kinds of problems that counselors perceive among their clients.

1. Lack of assurance
2. Lack of information
3. Lack of skills
4. Dependence
5. Cultural self-conflict
6. Interpersonal self-conflict
7. Intrapersonal self-conflict
8. Choice anxiety

Some advantages of viewing these kinds of client problems as problems in learning, have been clearly outlined.

(1) We already have a great deal of accumulated evidence and thinking about the problems of learning from psychology and educational psychology as Bijou has documented in Chapter Two. There is a theoretical and research base from which we can generate new ideas.

(2) We are immediately integrated with the educational enterprise. No longer are we working at cross purposes with teachers and administrators. All of us are concerned with helping young people to learn. Different ones of us may take responsibility for different aspects of the job, but if we conceive of

counseling as a learning process and communicate this to teachers and administrators, the fundamentals for co-operative action are greatly strengthened.

(3) We shall be better able to define our goals so that they can be reached.

(4) We can concentrate our attention on what should be done to develop more adaptive behavior. We shall be less concerned with mere talk about problems and more concerned about effective action. On the basis of what we know about learning it seems certain that if we merely encourage our clients to talk about their feelings, we shall increase the extent to which they can talk about their feelings; and if we merely encourage our clients to analyze and label past events with psychoanalytic terminology, we shall increase the extent to which they analyze and label past events with psychoanalytic terminology. On the other hand, if we encourage our clients to engage in constructive problem-solving activities, we shall find that they will be more able to deal effectively with their problems.

(5) We shall expect clients to feel an increased sense of responsibility for their own actions. By making clients aware of the consequences of their own actions and the fact that they can learn effective ways of dealing with their problems, we shall produce a heightened sense of responsibility. This is in contrast to the lack of responsibility implied by the notion that one's behavior is inappropriate because one has an unavoidable illness. (Kruboltz, 1966, pp. 8-9)

The purpose here is not to reject the importance of understanding, empathy, and other useful counseling concepts, but to point out that once the client's problem is clarified and understood, it still must be resolved. The client should also understand how the problem is solved, so that he can apply the solution to other similar problems when they arise. If the solution comes in some mysterious manner that he does not understand, he will only become more dependent on the counselor for the solution of future problems.

Goal Selection

After the clients problem (or problems) has been clarified, the next step is to select appropriate goals for the resolution of the problem (or problems). There has been much controversy among counselors concerning what constitutes appropriate goals for counseling. Though there is no simple solution to the problem of selecting appropriate goals for counseling, learning theory does provide important considerations for use in selecting these goals. It suggests that goals should be specific, and relevant to the problem at hand. The ineffectiveness of goals that are too broad has been pointed out by Krumboltz (1966). The goal should also be defined in such a way that its attainment involves the resolution of the problem. In addition, it should be compatible with the client's social and cultural environment in order to prevent other problems in the future. Finally, the goal should be realistic in relation to the client's capabilities, environment, and interests. These considerations will help the counselor to assist the client in selecting goals that will lead to effective solutions for given problems.

In recent years, there has been an increasing tendency for some counselors to advocate that counseling goals should be formulated by the client or counselor without regard to any social responsibility on the part of either the client or the counselor. However, on the basis of tested learning theory principles, it can be predicted that this kind of approach to problem-solving will only result in more problems for the client and society. On the other hand, if the goals are made compatible with the social and cultural environment, these problems will be prevented and the client and society will be better off.

If goals are unrealistic in relation to the client's capabilities and limitations, they will only lead to the failure of the client to obtain them, and accompanying frustration and anxiety. On the other hand, realistic goals lead to reward in the form of success and recognition. This will increase self confidence and the probability that the client will solve similar problems in the future.

Goals are important because they determine by their nature the way a problem will be solved. If goals are selected according to the above mentioned guidelines, the solutions that they lead to will be effective, appropriate, and will contribute to the individuals successful social adjustment.

Goal Attainment

Once the problem has been identified, and the goal has been selected, methods for attaining the goal must be outlined and utilized. The counselor should ask himself which method (or methods) of learning will be most suitable for helping this particular client to accomplish this particular goal in the most effective and meaningful way. A learning heirarchy (such as Gagne's) with learning principles to explain each type of learning, would be helpful in determining the best techniques to use to achieve particular goals. This determination of method (or methods) should consider the characteristics of the client as well as those of the goal. The goal may be the basis for selecting several feasible methods, but the final selection should consider important characteristics of the client, such as age, intelligence, experience, etc. While the goal specifies what is to be accomplished in the end, the client's characteristics are the most important factors in determining

how this end will be accomplished. For example, two clients may have the same goal of overcoming temper-tantrums. However, if one of the clients is five years old and the other is forty-five, we may want to use the method of operant conditioning to achieve the goal for the child, and the different method of rational problem solving to accomplish the same goal with the adult. The deciding factor here is the age of the client, but there are a number of other factors which may be equally as important in determining the particular method that will be most appropriate for achieving a given goal with a client. Some of these are the client's intelligence, abilities, interests, degree of autonomy, and environment.

Krumboltz (1966) discusses some implications and research of four general learning approaches to goal attainment that are presently being used and developed by some counselors. These approaches are: operant learning; imitative learning; cognitive learning; and emotional learning. A brief summary of the implications and research discussed by Krumboltz (1966, pp. 13-20) is useful for our purpose here.

In considering operant learning, Krumboltz points out the importance of different kinds of reinforcement that affect human behavior. He cites studies (Krumboltz and Schroeder, 1965; Krumboltz and Thoresen, 1964; Ryan and Krumboltz, 1964) which indicate that a counselor's attention and approval following certain kinds of responses makes a big difference in the kinds of responses the client makes in the future.

The kind of response made by the counselor will determine to some extent the direction that the client will take in the future. Counselors reinforce by their attention, interest, and approval certain kinds of client responses. By their inattention, lack of interest, and failure to respond, they extinguish or diminish the tendency of the client to talk about certain other

things. The counselor is reinforcing some kind of response or failing to reinforce some other kind of response whether he knows it or not. (Krumboltz, 1966, p. 14)

Krumboltz recognized that the reinforcements that occur outside of the interview are more important than those that occur during the short period of the interview. Thus he recognizes the importance of obtaining the cooperation of teachers, administrators, parents and friends if he is to be able to help some of his clients. In connection with this, he points out that the problem of underachievement could be greatly reduced if each child was reinforced for showing improvement over his own past performance, instead of being punished with low grades because his performance is below the average for the group.

The important question is not whether the counselor will use reinforcement (because he always does), but how he can use it in the best interests of his client.

The use of imitative learning in counseling is concisely summarized by Krumboltz.

A second approach in generating new procedures comes from our knowledge of imitative learning. The application to counseling is that the counselor can arrange for the client to observe models of the more adaptive behavior. Sometimes the client has so little idea of what might be more appropriate modes of behavior that he does not engage in any kind of talk or other behavior which constitutes even the beginning of a behavior to be reinforced. The work of Albert Bandura and his colleagues has contributed substantially to our knowledge of the conditions under which the observation of models is effective in changing behavior (e.g., Bandura and McDonald, 1963; Bandura, Ross and Ross, 1963; Bandura and Walters, 1963). A good deal of evidence has been accumulated to show that the counselor's use of models may influence the behavior of a client. How can this be done?

One way is to present tape recordings of people who are successfully engaged in appropriate problem-solving

activities. One effective model consisted of a 15-minute tape recording of a high school boy who was engaged in seeking information relevant to his educational and vocational plans (Krumboltz and Schroeder, 1965; Krumboltz and Thoresen, 1964). Another model tape contributed substantially to helping high school students to make better use of their unscheduled time (Smith, 1965). Other media are also appropriate. The use of programmed instruction and other forms of written material has been shown to be effective (Bruner, 1965). Video taped television presentations and movies may well be effective if appropriately designed (Krumboltz, Varenhorst, and Thoresen, in press). Well chosen books may have a marked influence as models. Autobiographies, biographies and appropriate fiction may be selected or developed in an effort to provide appropriate models for the kind of behavior a particular client may desire (Young, 1963). (Krumboltz, 1966, pp. 15-16)

The third general approach discussed by Krumboltz is that of cognitive learning. In this approach he includes the methods of verbal instruction, behavioral contracts, role-playing, and timing of cues.

He points out that in cases in which the client knows what he wants to do, giving him appropriate verbal instructions may be the most helpful.

Another way of using verbal instructions in counseling is to make contracts between the counselor and the client (Sultzer, 1962). Keirsey (1965) described the use of the "behavior contract" with aggressive, destructive, or disruptive school children. In this contract, the behavior desired by the child is explicitly stated; the contingencies of reinforcement are known in advance to all concerned; and the child gets full credit when he acts properly. The essential contract is, "in return for getting off the kids back, the adults are assured in writing by the student that he will take over the responsibility for educating himself and that whatever events ensue must be credited to him and not to them . . ." (Keirsey, 1965, p. 12).

Role-playing is another cognitive method of allowing the client to practice a task under low-stress conditions. Krumboltz uses the example of a young man who was too timid to return an unsatisfactory item to a store and complain about it, even though he wanted to. After two role-playing sessions, he was able to return the article and get his money back.

Another use of role-playing is represented by the technique of "role-shift" (Keirse, 1965) in which the client tries out a new pattern of behavior to find out if it will work. The example is used of the mother who had to nag her child continuously in the morning to get him out of bed, dressed, fed and off to school. To break this pattern, the mother was asked to play the role of the helpless bystander. The idea was that the child would be late for school for a few days but would eventually take over and get himself to school on time. This is a kind of trial-and-error learning that is used to test hypotheses. If the selected role works, the client is reinforced by the success. If it does not work, a new role can be tried.

Krumboltz discusses the method of timing cues as another application of from cognitive learning. He cites the study by Ryan (1965) which demonstrates the importance of cueing in improving study habits. He also provides support of his own for cueing.

Telling a person what to do may sometimes be effective, but the timing of the remark is often crucial and the importance of this timing is often overlooked. One parent I know consulted a psychologist about how her children were driving her crazy because they constantly forgot to do the things she asked of them. One of the most annoying habits the children had was to run in or out of the house without closing the door. The difficulty was that the mother reminded the children to close the door after they had already passed it. The psychologist pointed out that the most

effective cues are those that occur just prior to the behavior, not those that occur afterwards. The mother was told to observe her children and as they approached the door to give the reminder: "Close the door." Just a few days of extra-attentiveness on the part of the mother enabled her to give the reminders to each child just prior to touching the door so that soon thereafter the child needed no further reminders. (Krumboltz, 1966, p. 19)

The fourth general approach discussed by Krumboltz is that of emotional learning which he believes is based on classical conditioning principles. "The application to counseling is that unpleasant emotional reactions can be systematically reduced by pairing the eliciting stimuli with more pleasant stimuli" (Krumboltz, 1966, p. 19). The works of Wolpe (1958) and Lazarus (1961) are cited as examples of the classical conditioning approach to emotional learning. One of their techniques which Krumboltz mentions is to relax the client and then gradually introduce the stimuli which cause his anxiety, while he is still relaxed. This is done repeatedly until the anxiety arousing stimuli no longer cause the client to be anxious.

The techniques included in the approaches to learning discussed by Krumboltz are only a sample of those that can and will be derived from learning theory principles. These methods or techniques of learning will increase the effectiveness of the counseling process only if care is taken to select the appropriate method (or methods) for helping the individual client achieve a particular goal. There is still a great deal of work to be done in developing learning methods and in determining which methods or techniques are best suited for accomplishing which goals with which kind of clients.

Evaluation of Techniques

The only way that counseling techniques can be systematically improved is through their constant and careful evaluation by the counselors who use them. Counselors can provide for these needed evaluations by keeping records which provide at least the following information:

1. The goal as stated, and accepted by the client.
2. Description of the client, to include such relevant characteristics as age, intelligence, environment, and attitude.
3. The technique (or techniques) used to accomplish the goal.
4. The degree to which the goal was accomplished.

This information would help us to determine which techniques are best for accomplishing which goals with which kind of clients. Obviously, there is a need for research to determine which characteristics of the client are most appropriate for evaluation purposes. Until this can be done, we must do the best we can with what we have.

SUMMARY

Counselors have had to rely on theories of counseling that have been largely unsupported by research, and in many cases are composed of hypotheses that are untestable. This has resulted in the use of many counseling techniques and procedures that are not capable of being evaluated to determine their effectiveness.

Herein reviewed are some basic principles of learning theory that have research support, and have been, or may be applied to the counseling process. In addition, a procedure for counseling, based on learning theory principles, has been suggested which will improve the effectiveness of the counseling process. This was done by suggesting that goals be made specific to individual client problems, and that the technique (or techniques) for accomplishing the goal be determined by characteristics of both the goal and the client. The constant evaluation of counseling techniques, by simple record-keeping procedures which will enable the counselors to determine which techniques are most effective for accomplishing which goals with which kind of clients, is viewed as an essential prerequisite for improving these techniques. A variety of learning techniques are discussed, along with many that are suggested in the various theoretical outlooks that are considered. Other implications that learning theory and research have for counseling may be discovered from readings in Krasner and Ullmann (1965), Michael and Meyerson (1962), and Ullmann and Krasner (1965).

Implications for Counseling

The proposals contained in this paper suggest that the effectiveness of the counseling process can be increased by the use of a counseling procedure based on substantiated learning theory principles. These proposals also imply that although the counselor may be guided by broad, general goals, the goal for each client must be specific to the clients problem and aimed at its resolution. In addition, the techniques, selected upon the basis of the goal and the client, should enable the client to accomplish his goal in the most effective and appropriate manner possible. If these techniques are then constantly evaluated in the manner suggested, with a willingness on the part of the counselor to change, and seek better techniques when old ones fail, we can predict an increase in the effectiveness of the counseling which follows this procedure.

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Master of Education

Seminar Report: Learning Theory as Applied to the Counseling Process

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